

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
24 January 2002 (24.01.2002)

PCT

(10) International Publication Number  
WO 02/06978 A2

(51) International Patent Classification<sup>7</sup>: G06F 17/00

(21) International Application Number: PCT/GB01/03167

(22) International Filing Date: 13 July 2001 (13.07.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
09/616,846 14 July 2000 (14.07.2000) US

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(81) Designated States (national): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,

CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK,  
SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian  
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European  
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,  
IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,  
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

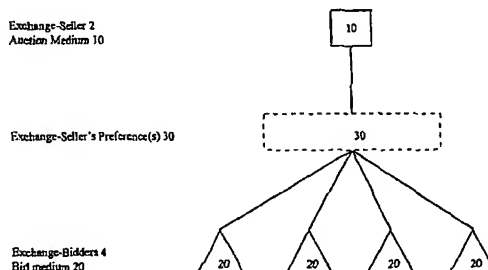
Published:

— without international search report and to be republished  
upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND SYSTEM FOR NON-MONETARY EXCHANGE OF GOODS AND SERVICES

AUCTION EXCHANGE SYSTEM 100



(57) Abstract: A method and system are disclosed for non-monetary exchange of goods and services. In one embodiment, an auction exchange system allows an exchange seller to offer a product or service medium in exchange for another product or service. The exchange seller may define certain preferences for the exchange. Exchange bidders then bid on the offered product or service by matching the preferences or offering other products or services in exchange. When a seller accepts a bid, the auction exchange system allows the exchange seller to aggregate the matching bids into a database, or "basket." The users of the auction exchange system have the option of obtaining a third party valuation of goods and services which are offered or bid. A flat fee for each unit of an offer is levied to the exchange seller. Likewise, a flat fee for each unit of a bid is levied to the exchange bidder. If a bid is rejected, the exchange bidder has the option of offering the bid product or service for exchange in a second auction without being charged the additional fee.

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## METHOD AND SYSTEM FOR NON-MONETARY EXCHANGE OF GOODS AND SERVICES

5 This invention relates generally to electronic commerce, in particular to a method for exchanging goods and/or services among remote users using a personal computer, and the like.

Ancient civilizations relied upon the marketplace to exchange goods and services to match their needs. The marketplace required individuals to physically gather together in order to display what they were offering and to inspect what they  
10 could obtain in an exchange. After some bargaining, goods or services were exchanged.

The ancient marketplace was an integrative system of economics which relied on a direct matching of needs through a means of an exchange, or barter systems. These systems were, however, generally inefficient due to geographical limitations  
15 which allowed only local merchants to participate in trading. Geographical limitations, in turn, resulted in fewer participants in the system and required specialization among merchants to match the needs of other local merchants. Each merchant would provide a particular medium to be exchanged in order to match the needs of as many other merchants as possible to maximize his chances of exchanging  
20 goods or services.

Over time, cash systems developed to increase the efficiency of the ancient marketplace. By creating an intermediate medium (i.e. cash) to exchange for goods and services, merchants were no longer required to directly match each other's needs in the marketplace. Instead, money could be exchanged for almost anything offered  
25 at the market.

With the advent of money in the marketplace, the value of goods and services in the market began to rely on a third party or supply-demand relationship. As a result, the integrative system of economics which used to rely on a matching of needs gave way to a distributive system. The outcome of a distributive or supply-demand  
30 relationship is a "price" which defines the monetary value of goods and services at any given time. While this provides flexibility, it also creates the incentive to accumulate as much of the monetary medium as possible during every transaction in order to increase the chance of meeting future needs.

There have been several attempts to introduce auction systems to the Internet.  
35 For example, U.S. Patent No. 6,006,201 issued to Berent, et al. discloses an on-line

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motor vehicle auction and information system which allows remote users to obtain information about motor vehicles and to participate in the auction of motor vehicles by using a personal computer. While this system allows remote users from a wide geographical range to participate in the auction, it is limited to the sale of motor vehicles and includes the exchange of a dollar amount for a motor vehicle purchased by a user during the sale.

U.S. Patent No. 5,966,699 issued to Zandi, et al. discloses a computer system for conducting an electronic loan auction over a computer network. The computer system includes the submission of a loan application to several lenders who may bid for the borrower's business. The system is expressly limited to a loan application processing.

More recent patents include several patents issued to Walker, et al. For example, U.S. Patent No. 5,897,620 discloses a method for matching unspecified time airline tickets by examining flight availability and notifying a purchaser of the selected flight. The object is to provide airline tickets corresponding to special fare listings without a specified departure time. However, the system is limited to the sale of airline tickets for cash or charge to a credit card. The purchaser does not have the ability to select the airline.

U.S. Patent No. 6,041,308 issued to Walker et al. discloses a method for processing the sale of products to buyers who have submitted a conditional purchase offer. This method is described as a "buyer driven" system in which buyers set the conditions of the sale. The method is also limited to cash bids. Additionally, the system awards compensation such as cash or prizes to rejected bidders in order to stimulate demand and curb dissatisfaction.

U.S. Patent No. 5,794,207 issued to Walker et al. is directed to a network system to facilitate buyer-driven conditional purchase offers. According to this system, the buyer communicates a binding purchase offer to potential sellers in search for potential buyers. The system is limited to offering a price for goods and services rather than an exchange.

Thus, there exists a need for a system that offers greater flexibility for its users and is not dependent on third party valuation. There is also a need for a more efficient system which allows users to directly match the needs of other users and thereby avoid sensitivity to economic conditions.

The present invention relates to an improved method and system for auctioning items by an electronic exchange that is designed to overcome the

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described problems associated with conventional systems of electronic commerce. The invention utilizes the unlimited geographical scope provided by the Internet to bypass the need for money or its equivalent to make possible a direct matching of the needs of its users. As a result, the present invention is less sensitive to economic conditions.

Advantageously, the invention increases the flexibility of an exchange transaction by allowing a seller to define the auction medium and specify the items which the seller prefers to receive in exchange for the auction medium. One or more participating bidders may then match the seller's preferences or describe other items that the bidder is willing to offer in exchange. The invention allows the auction participants to offer or bid as many units of an auction or bid medium as they wish and eliminates the need for an exchange of money or any substitute such as "barter dollars." As such, there is no requirement for a third party valuation of auction items which enables the participants to directly match each other's needs. For comparative purposes, however, the system allows the participants to obtain an independent third party valuation of auction items.

The auction system of the invention may require each seller and bidder to pay a fee to a host computer network for participating in the auction. The seller's fee is calculated by multiplying a flat nominal fee per unit of auction medium offered by the seller. The flat nominal fee is determined by the host computer network. Similarly, the bidder's fee is calculated by multiplying a flat nominal fee per unit of bid medium. The bidder may bid for some or all of the auction medium and the seller may accept some or all of a particular bid. In the event that the seller rejects a bid, or a portion of a bid, the system provides the bidder with the option of making another bid or offering the rejected bid for auction without payment of an additional fee.

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For a better understanding of the present invention reference will now be made, by way of example, to the accompanying drawings in which:

Figure 1 is a schematic block diagram illustrating an embodiment of an auction exchange according to the present invention;

5        Figure 2 is a flowchart diagram illustrating a feedback mechanism according to the present invention;

Figure 3 is a schematic block diagram illustrating a unit-driven value definition for a fee calculation method;

Figure 4 is a flowchart diagram illustrating an auction feedback exchange;

10       Figure 5 is a schematic block diagram illustrating a sorting mechanism for divisible or non-divisible goods;

Figure 6 is a flowchart diagram illustrating a link to third party value definition;

15       Figure 7 is a schematic block diagram illustrating a basket aggregation exchange;

Figure 8 is a flowchart diagram illustrating a basket auction feedback exchange;

Figure 9 is a schematic block diagram illustrating individual entities in a transactional setting;

20       Figure 10 is a flowchart diagram illustrating a general overview of a method of exchanging goods and services according to an embodiment of the present invention;

Figure 11 is a schematic block diagram illustrating an exchange auction management system according to an embodiment of the present invention;

25       Figure 12 is a flowchart diagram illustrating an exchange auction process according to an embodiment of the present invention;

Figure 13 is a schematic block diagram illustrating a database of exchange sellers and exchange bidders;

Figure 14 is a flowchart diagram illustrating a sorting method;

30       Figure 15 is a flowchart diagram illustrating a method of third party valuation;

Figure 16 is a schematic block diagram illustrating a basket aggregation method;

Figure 17 is a schematic block diagram illustrating a basic input form describing the physical and legal parameters of a given transaction;

35       Figure 18 is a schematic block diagram illustrating a medium description

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method;

Figure 19 is a schematic block diagram illustrating a bearer medium note;

Figure 20 is a schematic block diagram illustrating an exchange seller's preferences;

5 Figure 21 is a schematic block diagram illustrating a general viewing page layout;

Figure 22 is a schematic block diagram illustrating an exchange seller's viewing page layout; and

10 Figure 23 is a flowchart diagram illustrating an auction exchange according to an embodiment of the present invention.

As shown in Figure 1, an exchange seller 2 is interested in offering an auction medium 10 in exchange for another medium, or bid medium 20. The auction medium 10 can be anything of value to an exchange seller 2 who is interested in the exchange. Therefore, the exchange seller 2 may access an exchange auction system 15 100 by registering and otherwise providing any preliminary or identifying information required by the exchange auction system. Such information would include, but is not limited to, an identification of the auction seller, a description of the auction medium and, optionally, an identification of preferences 30 that the auction seller would like to receive in exchange for the auction medium. The exchange seller may be charged a fee for participating in the exchange auction system 100. However, the fee is discretionary and is dependent upon the exchange auction system and its method of generating revenue in exchange for access to the system.

25 An exchange bidder 4, who also has something of value that he or she is willing to exchange, may then access the exchange auction system 100 to view a description of the auction medium 10 which has been offered by an exchange seller as well as the exchange seller's preferences 30 if any. Initially, the auction bidder may be required to review a description of the various auction media which is then available for exchange and then make a selection of a specific auction medium. If the exchange bidder 4 is interested in an exchange, he or she may enter a bid medium 20 30 in exchange for the auction medium 10. It is not necessary for any bid medium 20 to directly match any of the preferences 30. Similarly, the exchange bidder 4 may also be charged a fee for participating in the exchange auction system 100.

35 In this embodiment, the exchange auction system 100 is a host computer network which enables auction participants to electronically access auction

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information and to electronically participate in all aspects of an auction transaction. The exchange auction system 100 includes a database server means to electronically store the auction data entered by the auction seller and the auction bidder. The exchange seller 2 and exchange bidder 4 gain access to the exchange auction system 100 from computer workstations that are linked to exchange auction system by communications network means. The system components and related network means to implement this embodiment of the invention are within the skill of the ordinary information systems expert. Moreover, the invention is not limited to this embodiment and is intended to include applications involving any type of electronic exchange of information.

In response to an auction medium 10 of interest, the exchange bidder 4 enters a description of bid medium 20. An exchange seller 2 has the option of accepting or rejecting some or all of a given bid medium 20. The exchange auction system 100 uses a feedback mechanism 12 which is illustrated in Figure 2. The feedback mechanism 12 identifies an accepted bid medium 40 and allows a rejected bid medium 50 to subsequently become an auction medium 10. The purpose of the feedback mechanism 12 is to ensure that each exchange bidder 4 has the option of participating in a transaction within two rounds of bidding, if he chooses to do so, when the bid medium 20 was rejected in the first auction. If the exchange seller 2 rejects the bid medium 20, the exchange auction system 100 identifies the rejected bid medium 50. If the time allocated for a given auction has not expired, the exchange bidder 4 has the option of submitting an adjusted bid. During the auction transaction, the exchange seller 2 and the exchange bidder 4 may communicate by E-mail or other means of communication to provide details about the auction medium 10, bid medium 20 or other information.

At the end of an auction, the exchange bidder 4 has the option of offering any rejected bid medium 50, or portion thereof, as an auction medium 10 in another auction without payment of an additional fee. In the event that the exchange seller 2 accepts the bid medium 20, the exchange bidder 4 is notified by the auction exchange system provider and the exchange seller 2 and exchange bidder 4 arrange for the exchange.

In one embodiment of the invention, there is a fee for participating in the exchange auction system 100 which is paid to the auction exchange system provider 110. The total compensation 82 for the system provider is calculated using a unit-driven value definition 14 which is set forth in Figure 3. The first step in determining

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the total compensation 82 is to multiply a flat nominal fee per unit offered 60 by the number of units of auction medium 10. The flat nominal fee is determined by the exchange auction system. The second step is to multiply a flat nominal fee per unit bid 70 by the number of units of bid medium 20. The sum of these two calculations  
5 provides the total compensation 82 to be paid by the auction participants to the system provider. If there is a successful monetary component to an auction medium 10 or a bid medium 20, the fee calculation 80 is based on a percentage of that monetary component.

The auction feedback exchange 16 illustrated in Figure 4 allows a rejected bid  
10 medium 50 to become an auction medium 10. This auction feedback exchange 16 incorporates the feedback mechanism 12 which identifies an accepted bid medium 40 and allows a rejected bid medium 50 to become an auction medium 10. The feedback mechanism 12 ensures that each exchange bidder 4 has the option of participating in a transaction within two rounds of bidding, if he chooses to do so,  
15 when the bid medium 20 was rejected in a preceding auction. New exchange bidders 4 will then have access to the auction medium 10 and begin another round of bidding. In the event that the exchange seller 2 accepts the bid medium 20, the exchange bidder 4 will be notified and the exchange seller 2 and exchange bidder 4 can arrange for the exchange.

As shown in Figure 5, the exchange auction system 100 utilizes a sorting  
20 mechanism 22 to sort accepted bid medium 40 and rejected bid medium 50. In the event the exchange seller 2 offers multiple units of auction medium 10, the exchange bidder 4 will have the opportunity to bid for a portion of the auction medium 10. As shown in Figure 5, each of the exchange bidders 4 has made a bid 20 for 10% of the  
25 auction medium. The sorting mechanism 22 then divides the auction medium 10 among the exchange bidders 4 who have made accepted bids 40. The rejected bid medium 50 is then available for a second round of the auction exchange system 100.

In the event that the participants would like to assess or compare the value of  
30 auction medium 10 and bid medium 20, the exchange auction system provides access to independent third party valuations for the auction medium 10 and the bid medium 20. As shown in Figure 6, the third party valuations 92, assist the exchange seller 2 and the exchange bidder 4 in making their decisions concerning the value of the exchange. The exchange seller 2 and the exchange bidder 4 may review the third  
35 party valuations 92 to make a value based comparison 90 of the auction medium 10 and the bid medium 20.



Figure 7 shows a basket aggregation exchange 84. Once the exchange seller 2 decides that a certain bid medium 20 matches his needs, the exchange seller 2 will accept the bid medium 20 so that some or all of the auction medium 10 is debited or removed from the offer.

5        Figure 8 shows a basket auction feedback exchange 86 which allows the exchange seller 2 and the exchange bidder 4 to interact with equal bargaining power. For example, it allows an individual to deal with a nation-state entity in the same manner that a corporate entity would deal with a nation-state entity. The number of units of auction medium 10 and bid medium 20 define the value of the exchange  
10        rather than the monetary value of the transaction.

Figure 9 shows the relationship between the auction medium 10 and the bid medium 20 which is sorted using a sorting mechanism 22.

The flow of information in the exchange auction system 100 is illustrated in Figure 10. The auction medium 10 and the bid medium 20 are first displayed on a  
15        site gate 300. In the first stage of the auction, an individual or entity will enter the site through the site gate 300 in order to either put a medium on offer as an exchange seller 2, to place a bid as an exchange bidder 4, or to simply view past or pending offers. To enter an auction medium 10, the exchange seller 2 may be required to pay a flat nominal fee per unit offered 60. Similarly, to place a bid medium 20 for  
20        auction, the exchange bidder 4 may be required to pay a flat nominal fee per unit bid 70. In one embodiment, there may also be a requirement for credit card payment 200 which is fed back to the exchange auction system 100 to identify the exchange seller 2 and the exchange bidder 4 and provide a method of payment. Other payment methods may also be used in the system. Both the exchange seller 2 and the  
25        exchange bidder 4 will interact through the exchange auction system 100. The second stage of the auction is also illustrated where an exchange bidder 4 has the option of becoming an exchange seller 2.

The connections of the various components of the exchange auction system 100 are illustrated in Figure 11. A central processing unit (CPU) 102 is linked to a  
30        third party valuation 92 and a database 104 containing a description of all offered mediums 10 and the corresponding bid medium 20 which are sorted by the sorting mechanism 22. The CPU 102 is also linked to E-mail 106 or other means of communication among the users. The exchange auction system 100 stores any data exchanged between the exchange seller 2 and the exchange bidder 4 in a storage  
35        database 108 for future reference or proof of transaction.

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The interactions which take place in the exchange auction system 100 are illustrated in Figure 12. This figure represents the exchange auction process 101 including the interactions between the exchange seller 2 and the exchange bidder 4 which are performed via E-mail 106 or other means of communication processed through the CPU 102. The third party valuation 92 can be accessed by the exchange seller 2 and exchange bidder 4 during the exchange auction process 101. Any bid medium 20 which has been sorted by the sorting mechanism 22 and identified as accepted bid medium 40 or rejected bid medium 50 will be stored in a database 104 in the CPU 102. The exchange auction process 101 also includes the option for the exchange bidder 4 to offer rejected bid medium 50 as the auction medium 10 in another auction.

Additional databases 130, 140 which may be accessed during the exchange auction process 101 are illustrated in Figure 13. These include a database of all offered mediums 130 and a database of all bids 140. Based on the information in the additional databases 130, 140, the fee calculation 80 can be performed. The auction exchange system provider 110 has the discretion to allow the data in the CPU 102 and additional databases 130, 140 to be viewed by any new entrant to the site 300.

The details of the sorting mechanism 22 are shown in Figure 14. The sorting mechanism 22 enables the exchange seller 2 to define the auction medium 10 using a medium description 600, and the number of units 700 of auction medium 10 put on offer. When appropriate, the exchange seller 2 must also specify the type of units being offered (e.g. kg, liters, etc.). The exchange seller 2 may also specify preferences 30 for exchange including a medium description 600 for the preference 30. The exchange auction system 100 enables an exchange bidder 4 to enter a bid medium 20 and define it using the same medium description 600 and, when appropriate, to indicate the number of units 700 of the bid medium 20. The exchange bidder 4 must also specify the type of units used for the bid medium 20. If desired, the exchange seller 2 and the exchange bidder 4 may assess the monetary value of the auction medium 10 and the bid medium 20 through a third party valuation 92.

The exchange auction system 100 allows both the exchange seller 2 and the exchange bidder 4 to include a monetary component to a given auction medium 10 or a given bid medium 20. Monetary auction medium 10 is defined according to the medium description 600 and the number of units 700 to specify both the type of currency and the amount offered. A fee calculation 80 based on a percentage of the monetary component will only be levied on the successful outcome of the

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transaction.

The mechanism of obtaining a third party valuation 92 is illustrated in Figure 15. The third party valuation 92 includes direct links to monetary traded exchanges (i.e. commodities or other), comparative price search engines to assess the lowest retail price of a comparable auction medium 10 or bid medium 20, comparative manufacturing costs, and other sources of independent appraisal. The exchange seller 2 and the exchange bidder 4 may review the third party valuations 92 to make a value based comparison 90 of the auction medium 10 and the bid medium 20.

When an exchange seller 2 accepts a bid medium 20 for exchange, the auction exchange system 100 allows the exchange seller 2 to place accepted bids 40 into a database known as a basket aggregation database 105. Figure 16 shows the basket aggregation database 105 which is stored in the CPU 102. The basket aggregation database 105 matches a defined proportion of auction medium 10 with each accepted bid 40 for the exchange.

There is a basic input form 950 which may be used by an exchange seller 2 to define the transaction along two parameters. They are the physical parameter and the legal parameter. The basic input form is shown in Figure 17. Upon completion of the basic input form 950, the system provider assigns encryption keys to the auction participant. Encryption keys represent, for example, a given user's digital signature. Specifically, the exchange seller 2 receives a physical ownership encryption key 611a representing the physical ownership of the auction medium 10 and a corresponding legal ownership encryption key 612a representing the legal ownership of the auction medium 10. The exchange bidder 4 also receives a physical ownership encryption key 611b and a legal ownership encryption key 612b for each unit of bid medium 20 when the exchange bidder 4 completes a basic input form 950 upon registering with the host exchange network system.

Figure 18 shows a sample medium description 600 which includes at least four dimensions. They are: context 601, medium type 602; location of medium 603, and the date of the medium 604. The exchange seller 2 may define preferences 30 along the same four dimensions 601, 602, 603 and 604. The exchange bidder 4 will also define a bid medium 20 along the four dimensions 601, 602, 603 and 604. Additional comments 605 may be entered by either the exchange seller 2 or the exchange bidder 4. The exchange auction system 100 may also provide a searching capability to enable the exchange seller 2 and the exchange bidder 4 to search for auction medium 10 and/or bid medium 20 according to any combination of the four

dimensions of the medium description 600.

Figure 19 shows a bearer medium note 610 which facilitates the direct trade of information, assets and/or services in accordance with the invention. The bearer medium note 610 is defined by a description of the four given dimensions 601, 602, 603, 604, a single unit of the auction medium 10 or the bid medium 20, as well as information about the physical ownership of the auction medium 10 or bid medium 20 and the legal ownership of the auction medium 10 or bid medium 20 at any given time. In other words, the combination of the basic input form 950, the medium description 600, and the type of units 701 define the bearer medium note 610.

When an exchange seller 2 accepts and aggregates a bid, he and the exchange bidder 4 will exchange legal ownership by an electronic exchange of encryption keys 612. This will act as an electronic authorization for the exchange. It is discretionary among the parties and depends on the nature of the auction whether the physical ownership encryption keys 611 are exchanged. The resulting encryption pairs in the bearer medium note 610 will show that the legal ownership of the auction medium 10 and, if appropriate, the bid medium 20 have been exchanged and a contract has been formed.

Figure 20 shows the preferences 30 of bid medium 20 to be received for auction medium 10. The preferences 30 may include the number of units 700 that the exchange seller 2 would like for the exchange. The exchange seller 2 must also specify the type of units of bid medium 20 to be received.

Upon accessing the system, the exchange seller 2 may access a general viewing page layout 900. Likewise, the exchange bidder 4 may access a general viewing page 901 which has similar components and allows the exchange bidder 4 to indicate the similarities between the auction medium 10 and the bid medium 20. These general viewing page layouts 900, 901 are illustrated in Figure 21 and Figure 22. The auction exchange system 100 allows a potential exchange bidder 4 to view the exchange seller's 2 auction medium 10 and preferences 30 on a general viewing page layout 901 for an exchange bidder 4. The auction exchange system provider 110 will decide whether to allow an exchange bidder 4 view the basket aggregation database 105 of the bid medium 20 for a given auction medium 10. The exchange seller 2 may use the general viewing page layout for the exchange seller 900 in order to decide whether to accept or reject the bid medium 20. The auction exchange system 100 allows the exchange seller 2 to view the aggregation of the matched bid medium 20 for a given auction medium 10.

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The interaction between the exchange seller 2 and the exchange bidder 4 is represented in Figure 23. This interaction includes intermediate steps of storing information in databases, 102, 104, and sorting the auction medium 10 and bid medium 20 using the sorting mechanism 22. The feedback mechanism 12 is also  
5 illustrated wherein rejected bid medium 50 becomes auction medium 10.

In operation, the exchange auction system 100 enables individuals and entities to use the Internet or other instant communication platform to perform economic transactions without the need for an intermediary monetary medium or monetary substitute. An exchange seller 2 inputs an auction medium 10 as well as preferences  
10 30 for exchange. An exchange bidder 4 will have the opportunity to view the auction medium 10 on a general viewing page for the exchange bidder 901 and enter a bid medium 20 for exchange by meeting one of the defined preferences 30 or by entering another bid medium 20. In the event that a bid medium 20 is not accepted by the exchange seller 2, the exchange bidder 4 will have the option to enter the rejected bid  
15 medium 50 as an auction medium 10 without incurring the flat nominal fee 60.

The following are illustrative examples of the present invention.

#### Example 1:

Placer Dome Corporation ("Placer") is looking to enhance general  
20 productivity with the acquisition of new portable computers. Instead of using cash to purchase the computers, Placer would like to participate in the electronic auction sponsored by an accessible host computer network and offer 2,000 ounces of gold in exchange for as many portable computers in the United States as possible. Therefore, Placer enters a description of the gold in the auction as well as its preferences for the  
25 type of computers it would like to receive in exchange for the gold. Placer must also define the type of units of gold (in this case ounces). The network charges Placer a fee of \$2 for each unit of gold placed on auction.

The auction is accessed by several bidders including IBM, Compaq and Nokia. Each bidder is charged a fee of \$1 for each unit bid. IBM offers 300 of its  
30 756 computers located in New York in exchange for 500 ounces of the offered gold. IBM is charged \$300 for this bid. Compaq offers 350 of its 211 computers located in Houston in exchange for 550 ounces of the gold. Compaq is charged \$350 for this bid. Nokia offers 3,000 of its 990 wireless phones from Finland in exchange for 510 ounces of the gold and is charged \$3000.

35 After reviewing the bids, Placer decides to accept the bid from IBM and reject

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the bids from Compaq and Nokia. According to the features of the auction, IBM and Nokia now have the option of adjusting their bids or offering their products in another auction without payment of any additional fee. The example is summarized below.

5

Exchange seller = Placer Dome Corporation

Exchange bidder 1 = IBM Corporation

Exchange bidder 2 = Compaq Corporation

Exchange bidder 3 = Nokia Corporation

10

Exchange seller's offered medium	20 carat (context) Gold (medium) in Peru (location) Units = 2,000 ounces
Preferences	Any (context) Portable Computer (medium) from U.S. (location)
Exchange bidder 1	IBM 756 computer from New York Units = 300 for Units = 500 of Offered medium (ounces of gold)
Exchange bidder 2	Compaq 211 computer from Houston Units = 350 for Units = 550 of offered medium
Exchange bidder 3	Nokia 990 Wireless Phone from Helsinki Units = 3,000 for Units = 510 of offered medium
<b>Fees Generated</b>	Exchange seller: 2,000 units at \$2 = \$4,000 Exchange bidder 1: 300 units at \$1 = \$300 Exchange bidder 2: 350 units at \$1 = \$350 Exchange bidder 3: 3,000 units at \$1 = \$3,000 <b>Total</b> \$4,000 + 300 + 350 + 3,000 = \$7,650

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**Example 2:**

An individual would like to exchange 100 shares of Microsoft stock for 50 shares of GE stock and 20 shares of IBM stock. The individual decides to participate in an online auction as an exchange seller to reach as many potential bidders as possible. The exchange seller enters a description of the auction medium as well as his preferences for the exchange. After reviewing the auction medium offered by the individual several bidders decide to place bids for the stock. The exchange seller can review these bids and accept some or all of a given bid. Once the exchange seller accepts a portion of a bid, it is placed in a basket so that the accepted bids are stored in one easily accessible database. The invention enables a multiple, non-linear aggregation of bids within a single transactional setting. The example is summarized below.

Auction medium: Y 100 shares of Microsoft stock

Preferences: P1 50 shares of GE stock  
P2 20 shares of IBM stock

Bids: x1 20 shares of GE in exchange for 17 shares of Microsoft  
x2 25 shares of GE for 19 shares of Microsoft  
x3 5 shares of IBM for 10 shares of Microsoft  
x4 15 shares of IBM for 35 shares of Microsoft  
x5 17 shares of Cisco for 22 shares of Microsoft  
x6 12 shares of ABB for 5 shares of Microsoft

Aggregated bids in basket aggregation database: (i.e. bids accepted by Exchange seller at his discretion)

$$\%Y = x1 + x2 + x4 + x5 + x6$$

Y = 98 Microsoft shares [98% of offer has been matched]

Basket = 45 shares of GE [linear - similar to preference P1]  
15 shares of IBM [linear - similar to preference P2]  
17 shares of Cisco [non-linear - different from either preference P1 or P2]  
12 shares of ABB [non-linear - different from either preference P1 or P2]

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### CLAIMS

1. A method for auctioning items by an electronic exchange of auction information between remote users and a host auction exchange system comprising:
  - (a) inputting auction information by an exchange seller to the host auction exchange system about an auction medium being offered for auction, wherein the auction information comprises a description of the auction medium, and
  - (b) inputting bid information by at least one exchange bidder to the host auction exchange system about a bid medium being offered in exchange for the auction medium, wherein the bid information comprises a description of the bid medium, and
  - (c) accepting or rejecting all or some of the bid medium by the exchange seller, wherein the auction is transacted without the exchange of money between the exchange seller and the exchange buyer.
2. The method according to claim 1, wherein separate encryption means authenticate ownership of the auction medium by the exchange seller and ownership of the bid medium by the exchange bidder.
3. The method according to claim 2, wherein the encryption means are assigned by the host auction exchange system.
4. The method according to claim 2, wherein the encryption means is a digital signature.
5. The method according to claim 2, wherein the acceptance of all or some of the bid medium by the exchange seller is signified by an exchange of encryption means by the exchange seller and the exchange bidder.
6. The method according to claim 5, wherein legal ownership of the auction medium is transferred to the exchange bidder and legal ownership of the bid medium is transferred to the exchange seller with the exchange of the encryption means by the seller and bidder.
7. The method according to claim 6, wherein transfer of legal ownership is effected without transferring physical possession of the auction medium or bid medium.
8. The method according to claim 1, wherein the auction information includes a description of the auction medium and at least one preference in exchange for the auction medium.
9. The method according to claim 1, wherein the exchange seller and exchange bidder pay the host auction exchange system a fee to participate in an auction sponsored by the host computer network.



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10. The method according to claim 9, wherein the fee paid by the exchange seller is calculated by multiplying a fee, as determined by the host auction exchange system, by the units of auction medium to be auctioned by the exchange seller.
11. The method according to claim 9, wherein the fee paid by the exchange bidder is calculated by multiplying a fee, as determined by the host auction exchange system, by the units of bid medium offered by the exchange bidder.
12. The method according to claim 9, wherein the exchange seller rejects the bid medium and the exchange bidder has the option to offer the rejected bid medium for auction without paying another fee.
13. The method according to claim 1, wherein the exchange seller offers multiple units of exchange medium for auction.
14. The method according to claim 13, wherein the exchange bidder offers a bid medium for some or all of the exchange medium units.
15. The method according to claim 1, wherein the monetary value of the auction medium, bidding medium or both media is determined by a third party valuation.
16. A system for auctioning items by an electronic exchange of auction information comprising:
- (a) a means for inputting auction information by an exchange seller through a network to a host computer about an auction medium being offered for auction, wherein the auction information includes a description of the auction medium and at least one preference in exchange for the auction medium;
  - (b) a means for inputting bid information by at least one exchange bidder through the network to the host computer about a bid medium being offered in exchange for the auction medium, wherein the bid information includes a description of the bid medium;
  - (c) a storage means on the host computer for storing the auction information and bid information in a database;
  - (d) a programming means, wherein the exchange seller determines acceptance or rejection of the bid by the exchange seller and where the auction is transacted without the exchange of money between the exchange seller and the exchange buyer; and
  - (e) a means for transmitting and displaying through a network to the exchange seller and exchange bidder the acceptance or rejection of the bids.
17. The system according to claim 16, wherein the network comprises the Internet.

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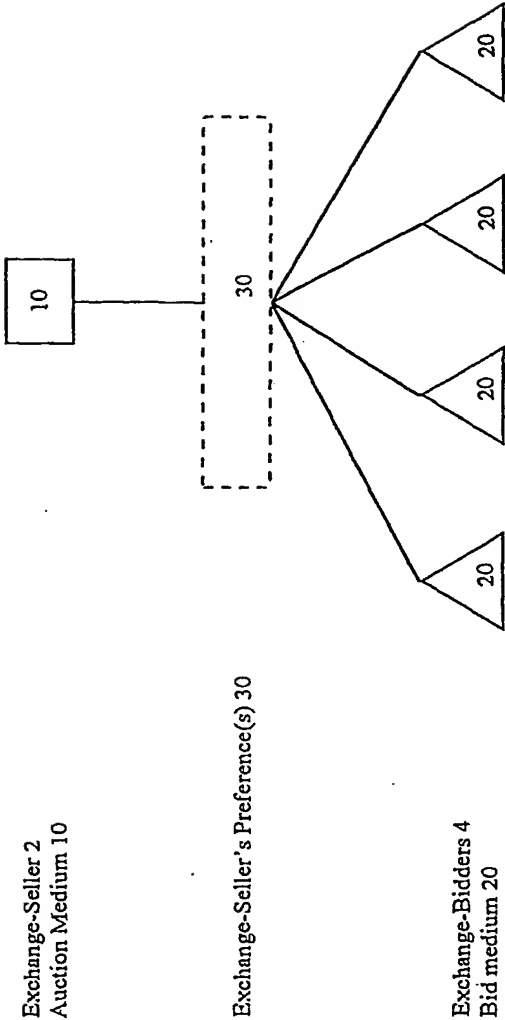
18. The system according to claim 17, wherein the database comprises a relational database.
19. The system according to claim 16, wherein separate encryption means authenticate ownership of the auction medium by the exchange seller and ownership of the bid medium by the exchange bidder.
20. The system according to claim 19, wherein the encryption means are assigned by the host auction exchange system.
21. The system according to claim 19, wherein the encryption means is a digital signature.
22. The system according to claim 19, wherein the acceptance of all or some of the bid medium by the exchange seller is signified by an exchange of encryption means by the exchange seller and the exchange bidder.
23. The system according to claim 22, wherein legal ownership of the auction medium is transferred to the auction seller and legal ownership of the bid medium is transferred with the exchange of encryption means.
24. The system according to claim 23, the transfer of legal ownership is effected without transferring physical possession of the auction or bid medium.
25. The method according to claim 16, wherein the auction information includes a description of the auction medium and at least one preference in exchange for the auction medium.
26. The system according claim 16, wherein the exchange seller and exchange bidder pay the host computer a fee to participate in an auction sponsored by the host computer.
27. The system according to claim 26, wherein the fee paid by the exchange seller is calculated by multiplying a fee, as determined by the host computer, by the units of auction medium to be auctioned by the exchange seller.
28. The system according to claim 26, wherein the fee paid by the exchange bidder is calculated by multiplying a fee, as determined by the host computer, by the units of bid medium offered by the exchange bidder.
29. The system according to claim 26, wherein the exchange seller rejects the bid medium and the exchange bidder has the option to offer the rejected bid medium for auction without paying another fee.
30. The system according to claim 16, wherein the exchange seller offers multiple units of exchange medium for auction.
31. The system according to claim 30, wherein the exchange bidder offers a bid

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medium for some or all of the exchange medium units.

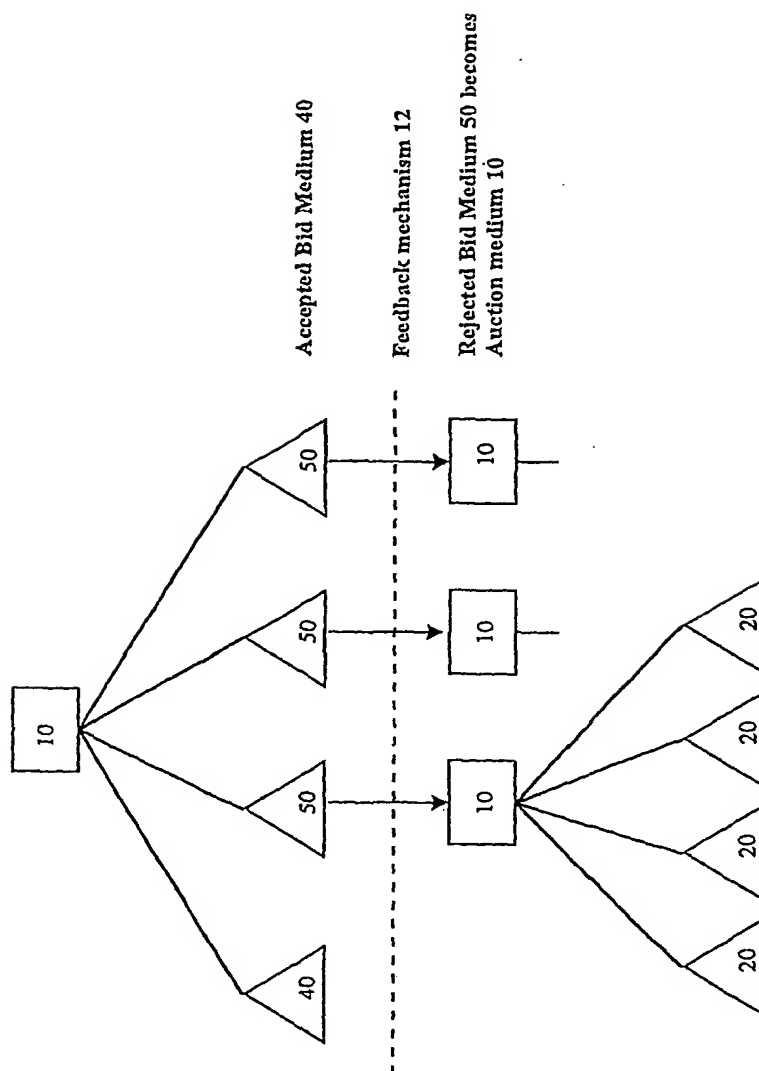
32. The system according to claim 16, wherein the monetary value of the auction medium, bidding medium or both media is determined by a third party valuation.

FIG. 1  
AUCTION EXCHANGE SYSTEM 100



**Fig. 2**

## FEEDBACK MECHANISM 12



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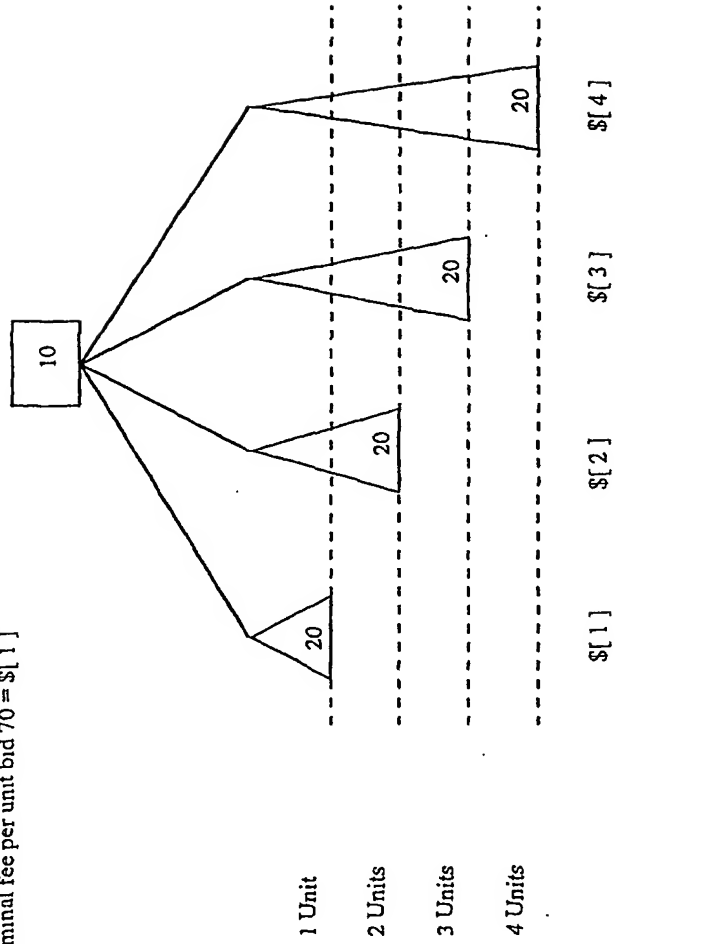
UNIT-DRIVEN VALUE DEFINITION 14

Fig. 3

Assumptions:

- flat nominal fee per unit on offer  $60 = \$[2]$
- flat nominal fee per unit bid  $70 = \$[1]$

1 unit =  $\$[2]$



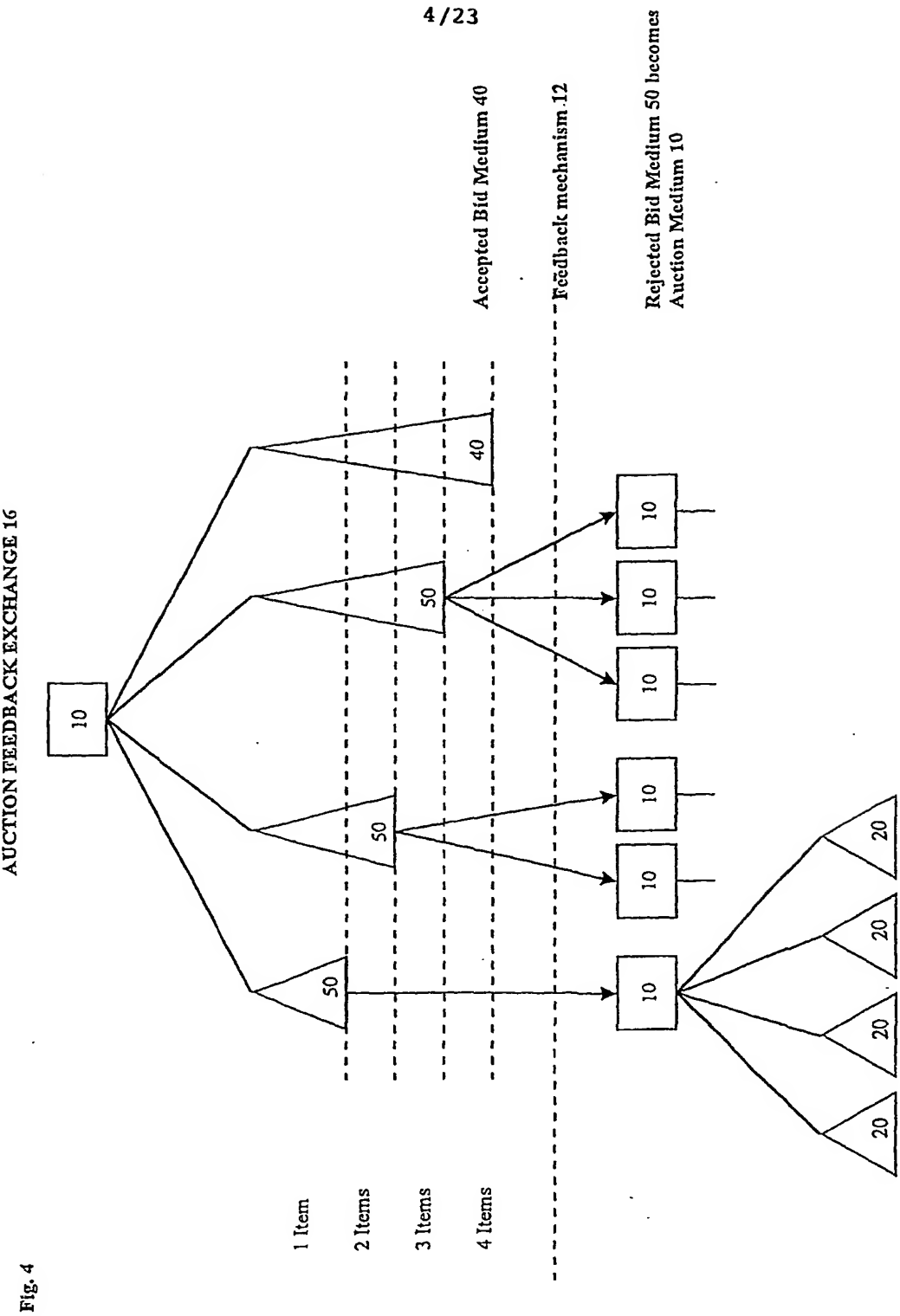
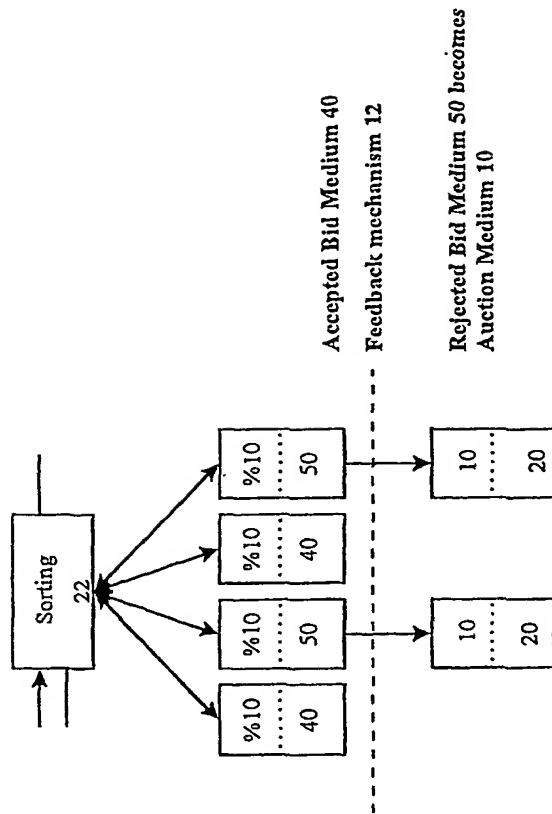


Fig. 5  
SORTING MECHANISM 22



%10 - Amount of Auction Medium Bid for



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LINK TO THIRD PARTY VALUE DEFINITION

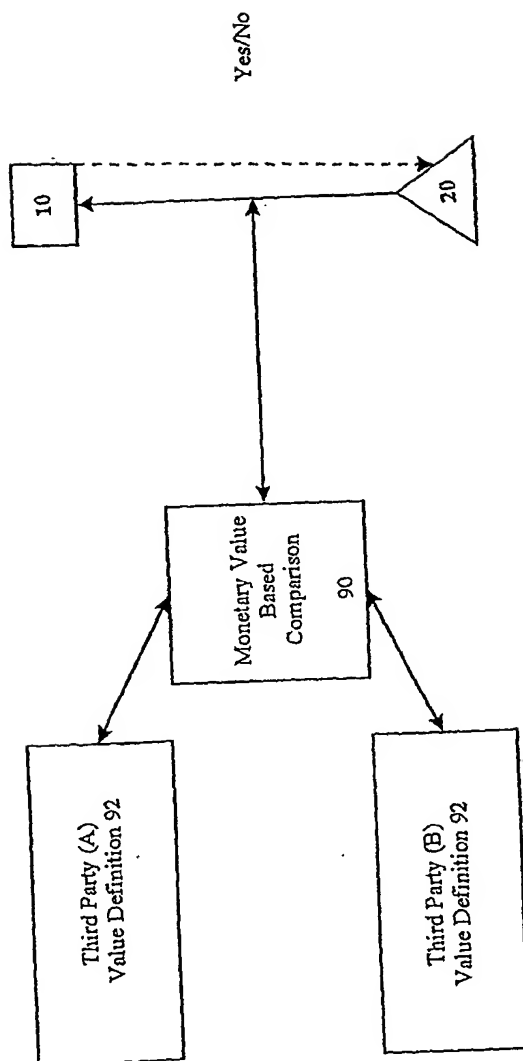
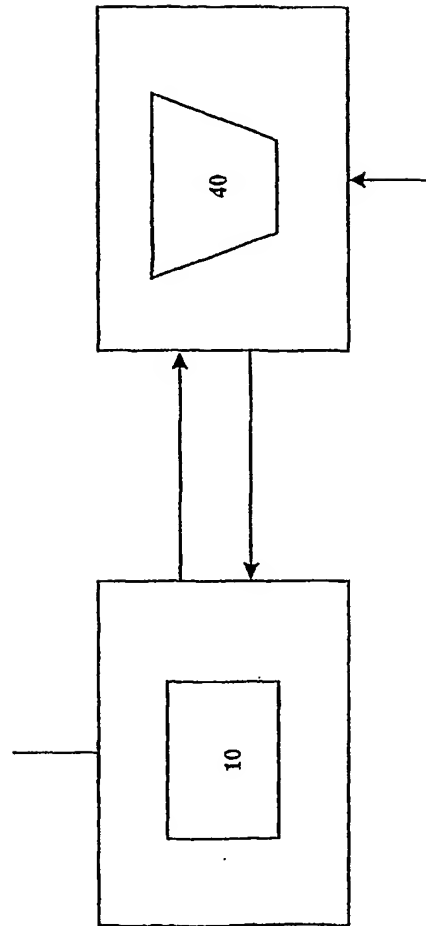


Fig. 6

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BASKET AGGREGATION EXCHANGE 84

Fig. 7



40 = Unit-Based Bidding Aggregation (Debit) process or basket

10 = Multi-Unit Auction Medium on offer

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BASKET AUCTION FEEDBACK EXCHANGE 86

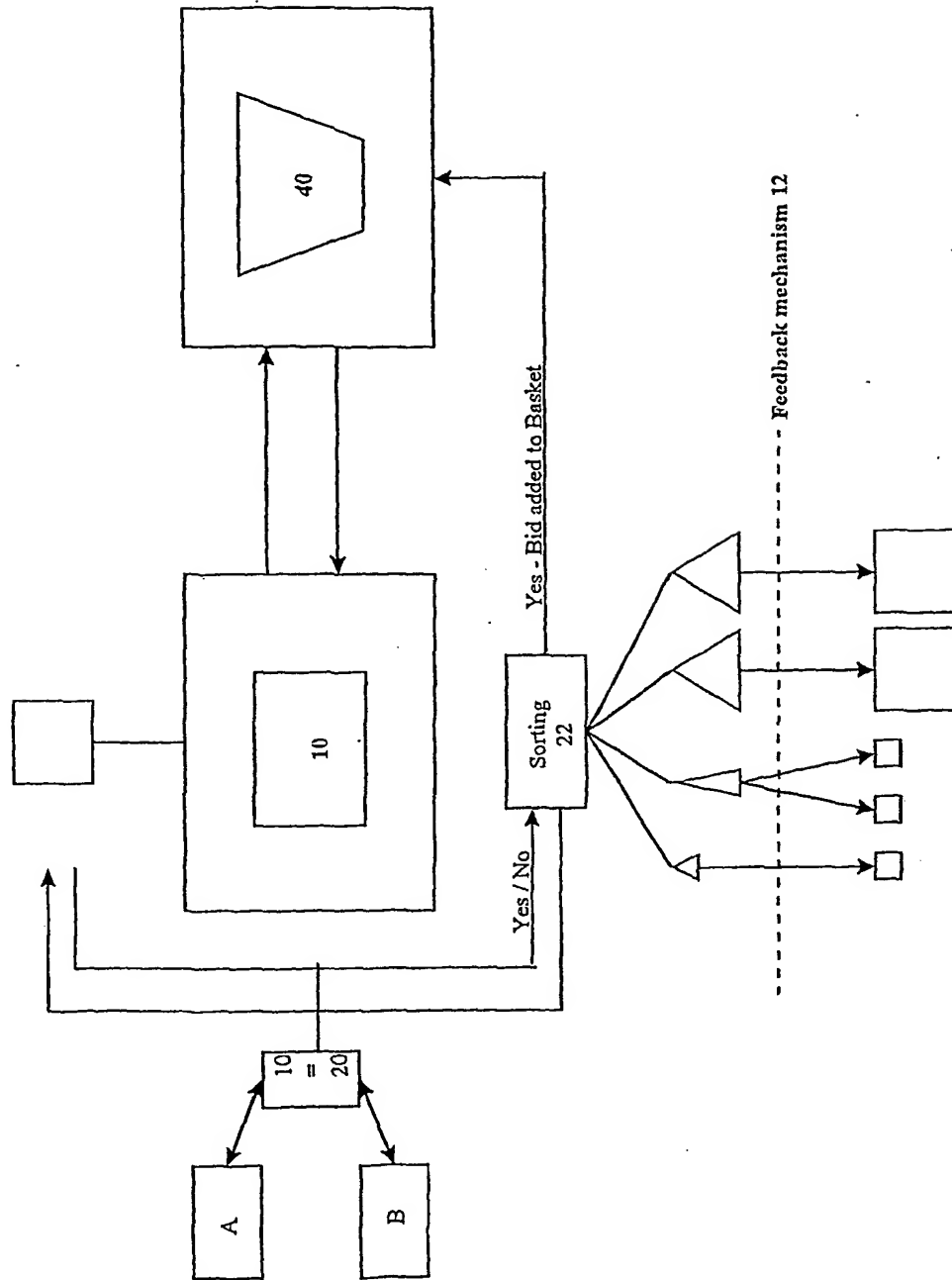
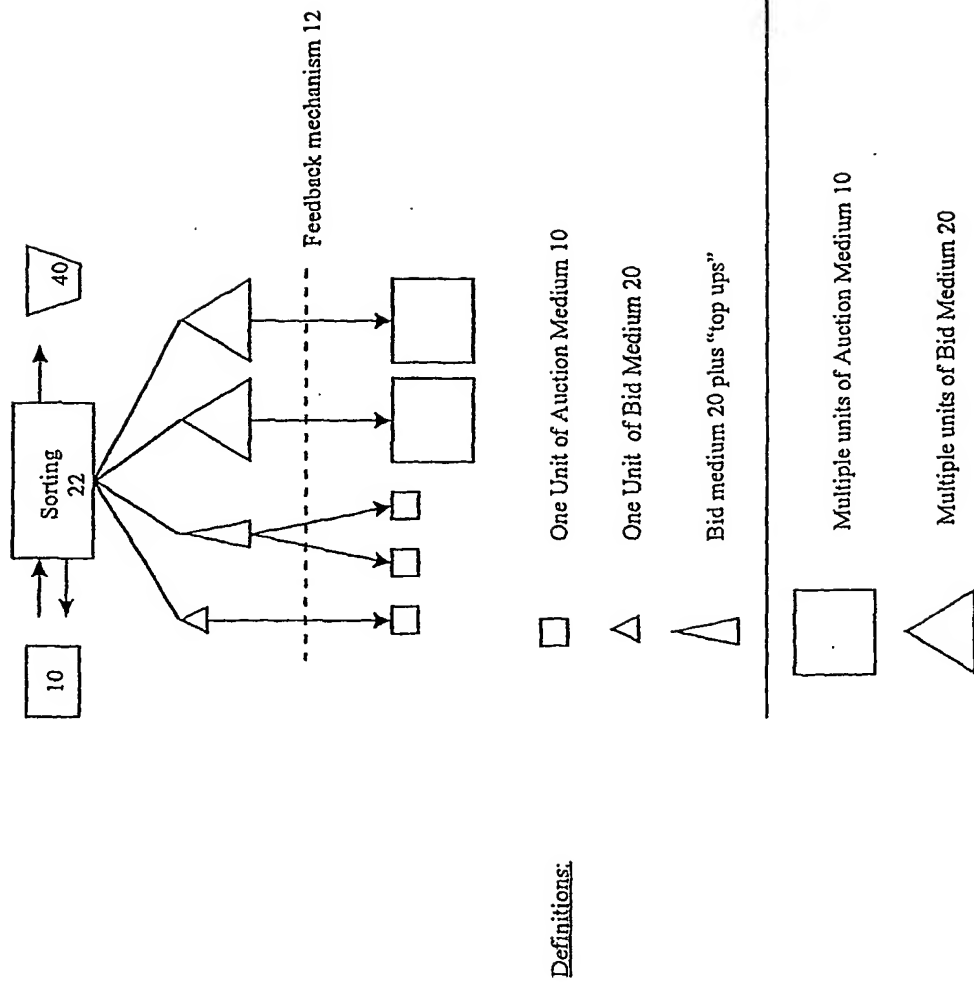


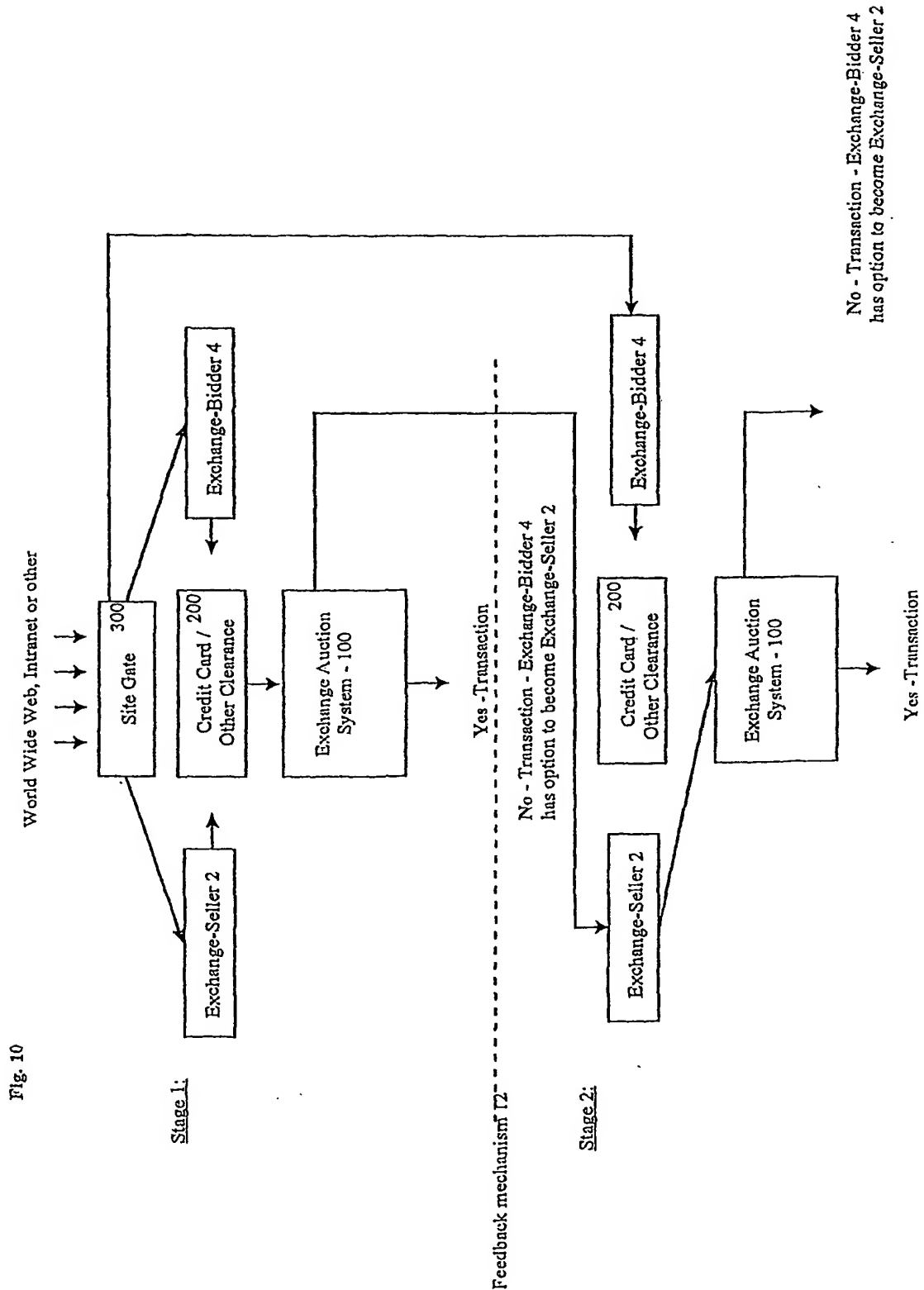
Fig. 8

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Fig. 9  
SORTING MECHANISM 22 FOR AUCTION MEDIUM 10 AND BID MEDIUM 20

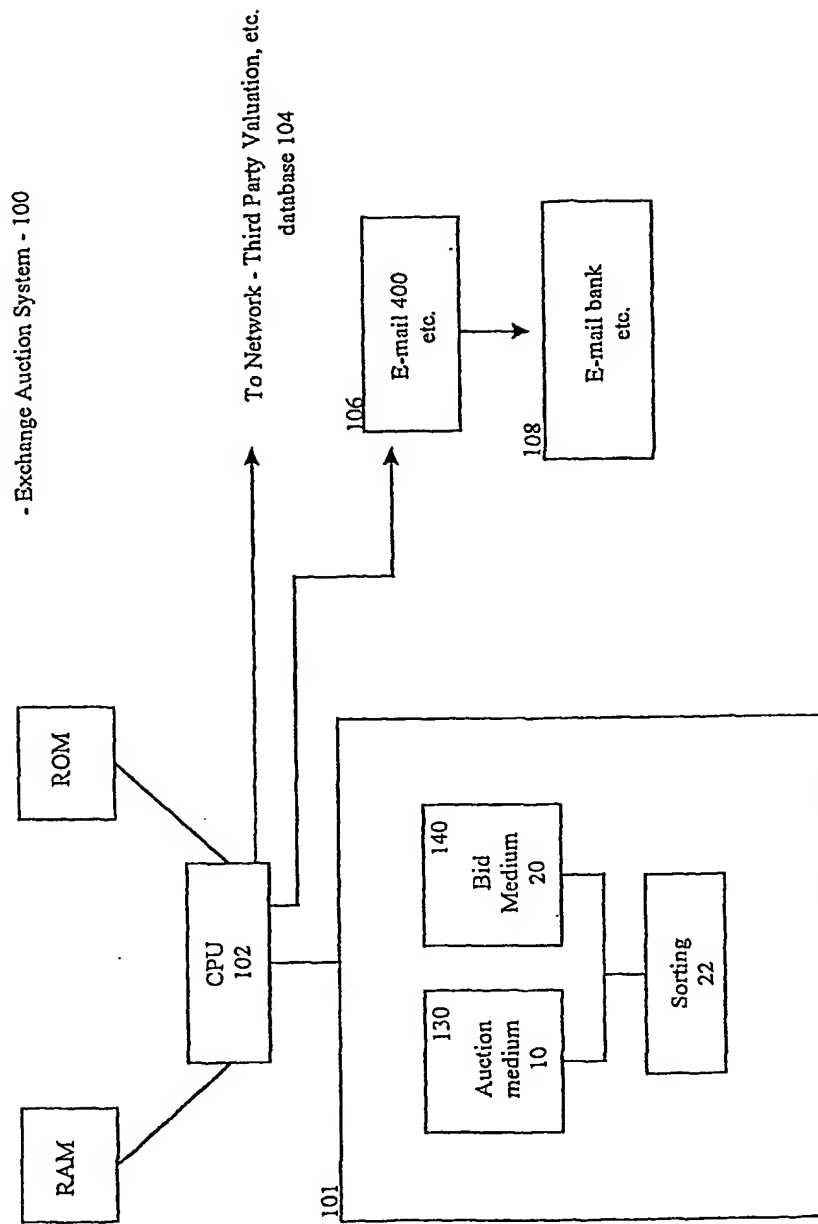


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Fig. 11



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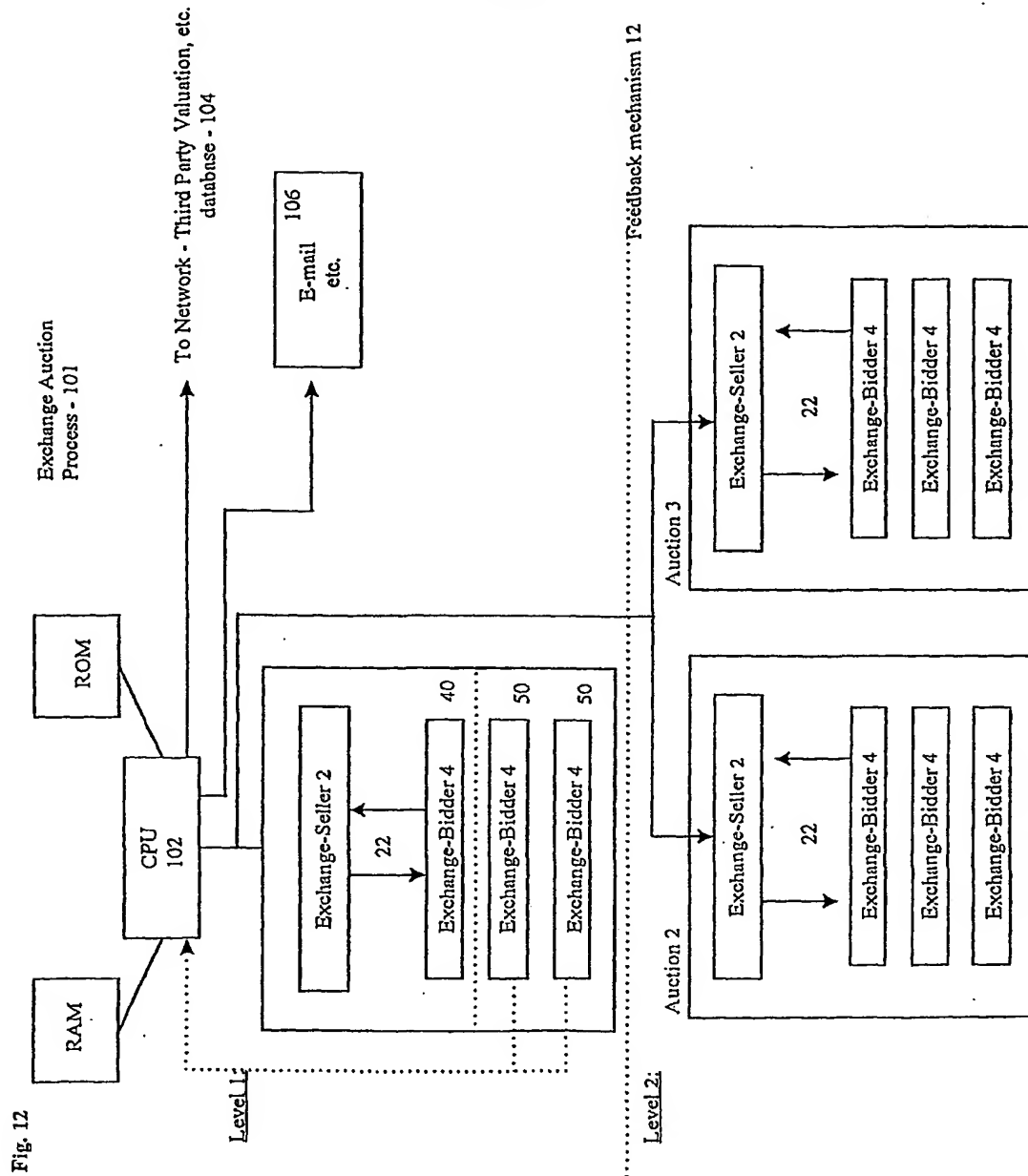
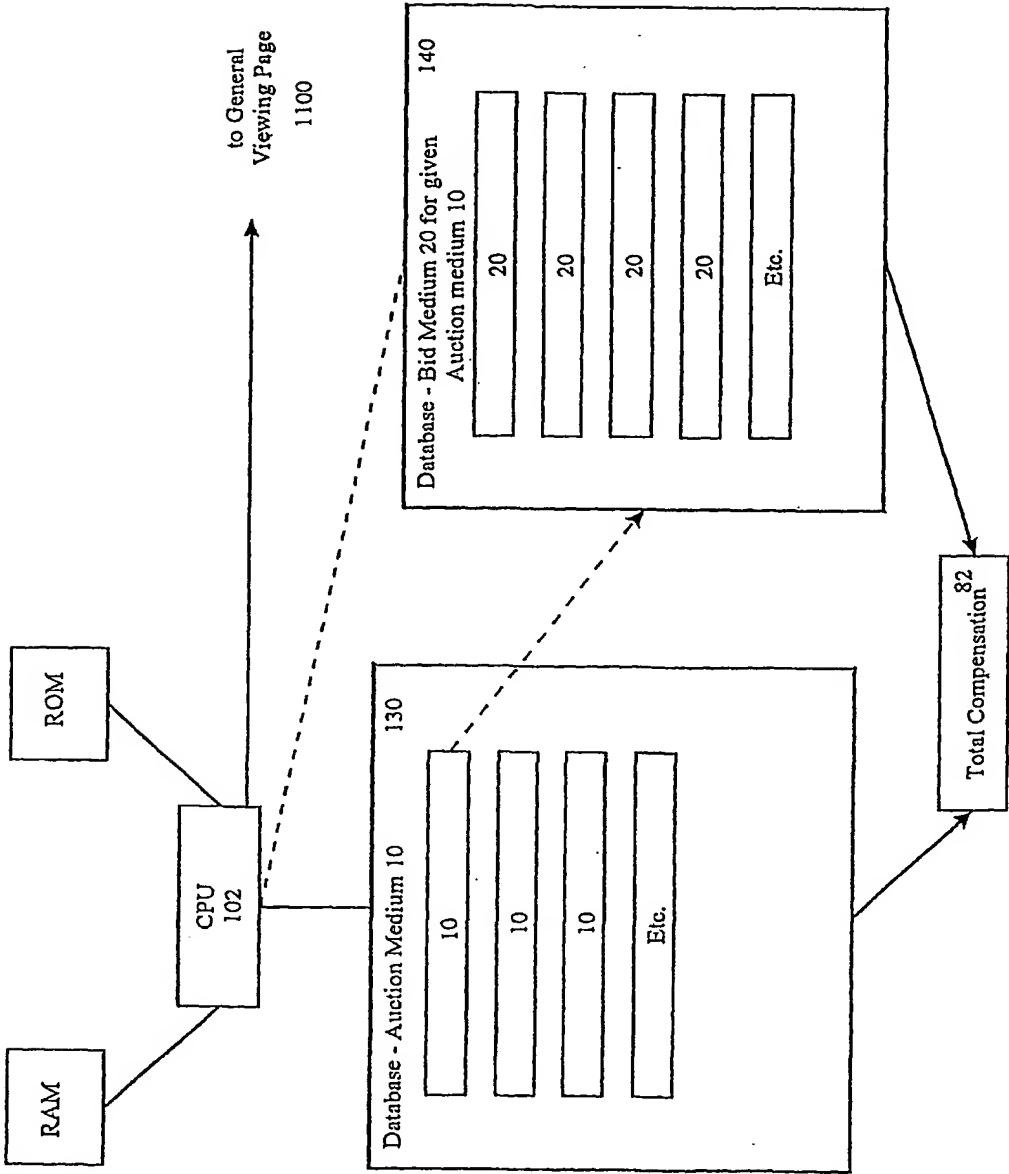


Fig. 13





- Sorting - 22

Fig. 14

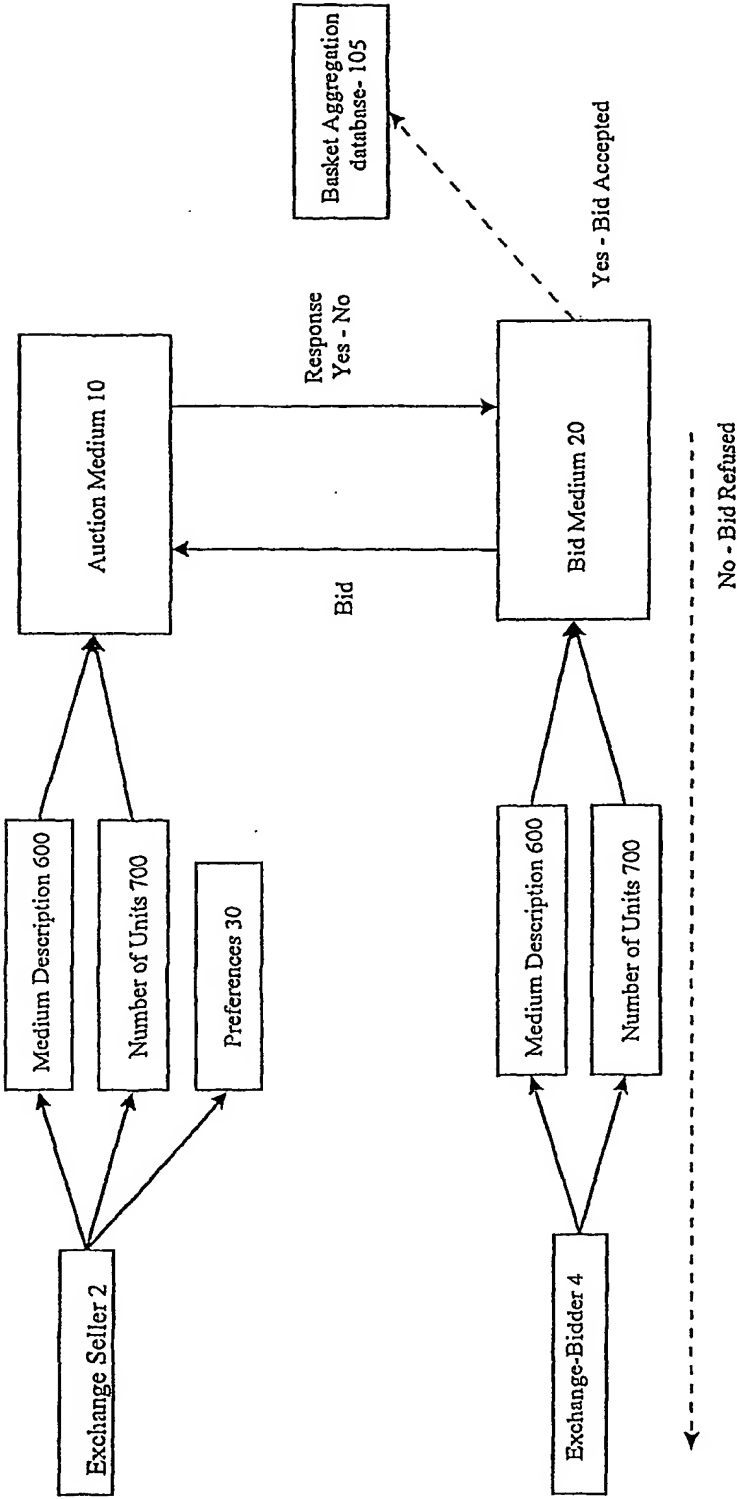
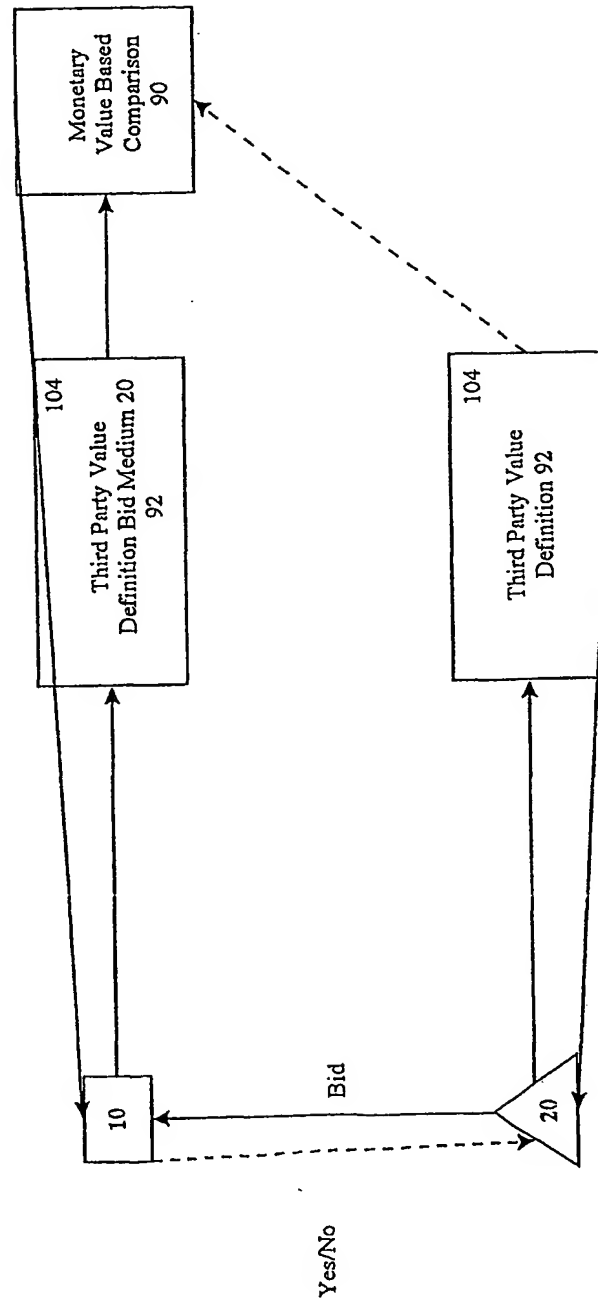


Fig. 15

- Third Party Valuation database - 104



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Fig. 16

- Basket Aggregation - 105

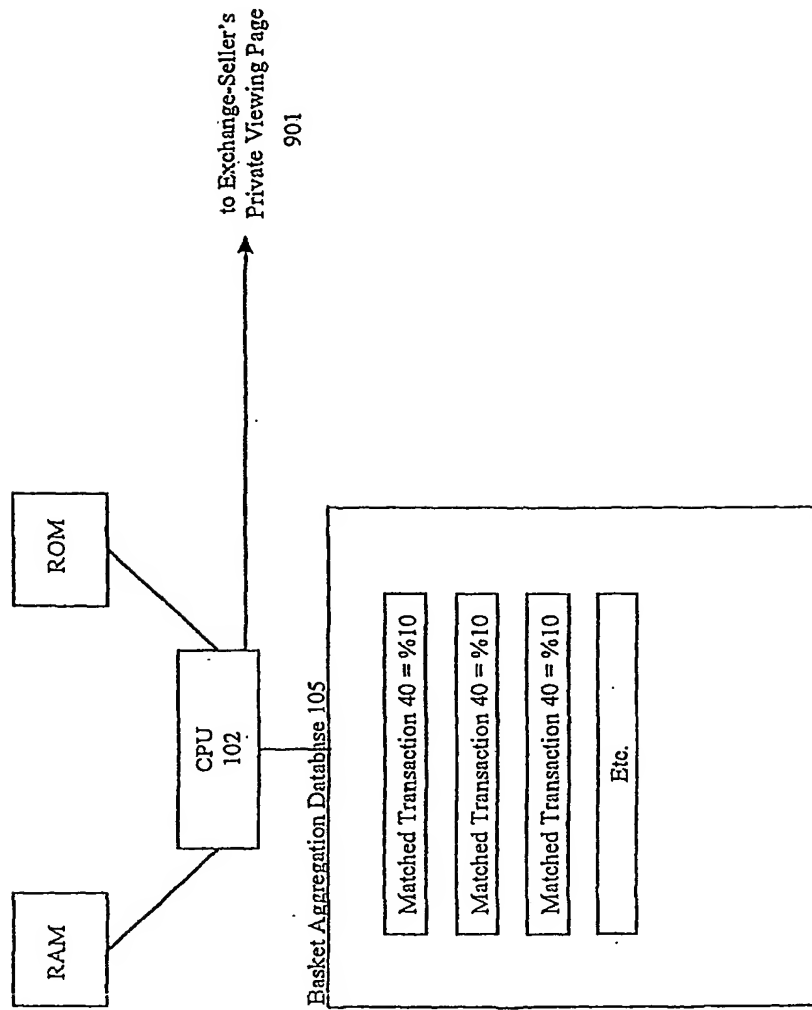


Fig. 17

- Basic Input Form 950

Physical Ownership - Input

Timing - Physical Ownership Period:

- Transaction Start Date
- Transaction End Date

Owner:

Main Name

Forename

Entity's Name

Address

Phone/Fax/E-Mail, etc.

Legal Ownership - Input

Timing:

- Transaction Start Date
- Transaction End Date

Owner:

Main Name

Forename

Entity's Name

Address

Phone/Fax/E-Mail, etc.

**Fig. 18**

**- Medium Description - 600**

Business/Commodity		Information		Asia		Europe		Americas		Date of Medium 604	
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- Bearer Medium Note - 610

Fig. 19

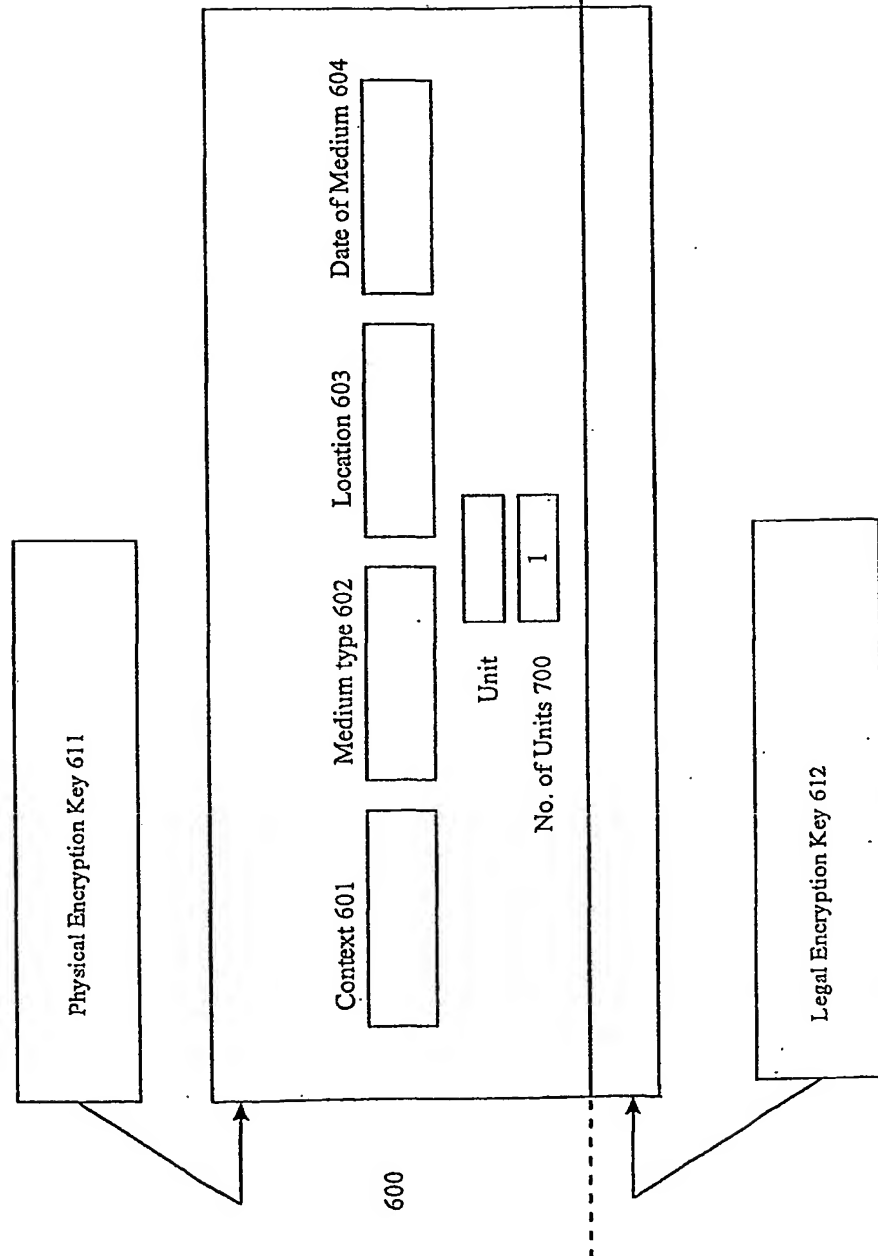


Fig. 20

- Preferences - 30

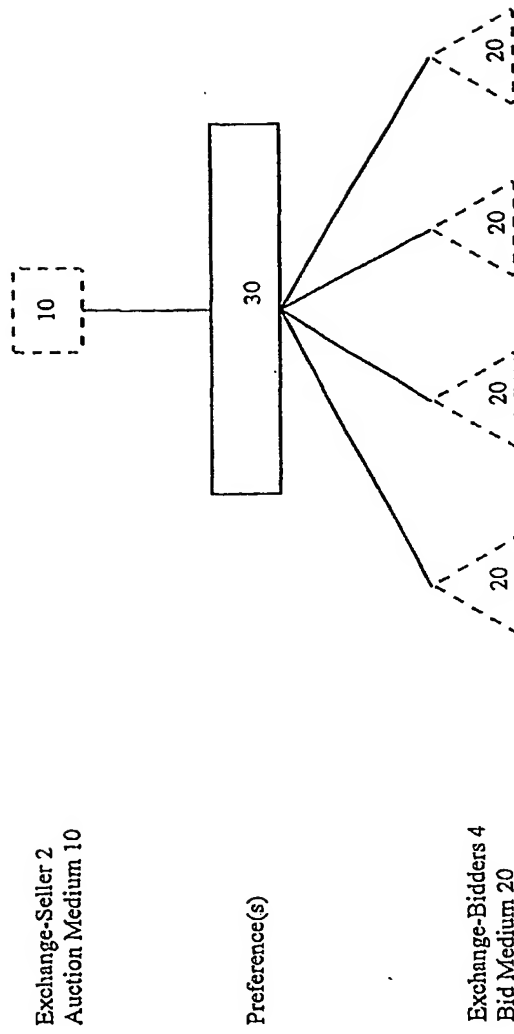


Fig. 21

Viewing Page Layout 900

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Viewing Page Layout 901

Fig. 22

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Fig. 23

